GB 2292335A

(12) UK Patent Application (19) GB (11) 2 292 335 (13) A

(43) Date of A Publication 21.02.1996

(21) Application No 9416797.0

(22) Date of Filing 19.08.1994

(51) INT CL[6]
A01D 90/10

(52) UK CL (Edition O)
B5F F23E2

(56) Documents Cited
None

(58) Field of Search
UK CL (Edition M) B5F
INT CL[5] A01D
ONLINE DATABASES : WPI

(71) Applicant(s)
Roger John Rout
Cherry Dene Farm, Hellington Corner, Bergh Apton, NORWICH, Norfolk, NR15 1BE, United Kingdom

Beryl Eda Rout
Cherry Dene Farm, Hellington Corner, Bergh Apton, NORWICH, Norfolk, NR15 1BE, United Kingdom

(72) Inventor(s)
Roger John Rout
Beryl Eda Rout

(74) Agent and/or Address for Service
William Jones
Willow Lane House, Willow Lane, NORWICH, Norfolk, NR2 1EU, United Kingdom

(54) Improvements in and relating to round balers

(57) A device integral to, or operatively associated with, a round baler comprises a frame 1 for receiving a bale as it exits a round baler which, in use, is adapted to displace the bale laterally away from a first position at the rear of the baler to a second position to one side of the baler such that the tailgate of the baler can be closed without the need to move the baler forwards.

A movable support member 5 is pivoted by piston 8, carrying the bale with it clear of the baler.

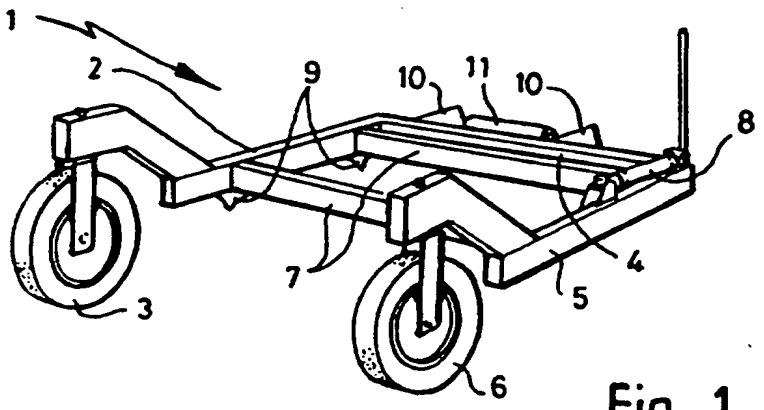

Fig. 1

GB 2 292 335 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

)OCID: <GB___2292335A__I_>

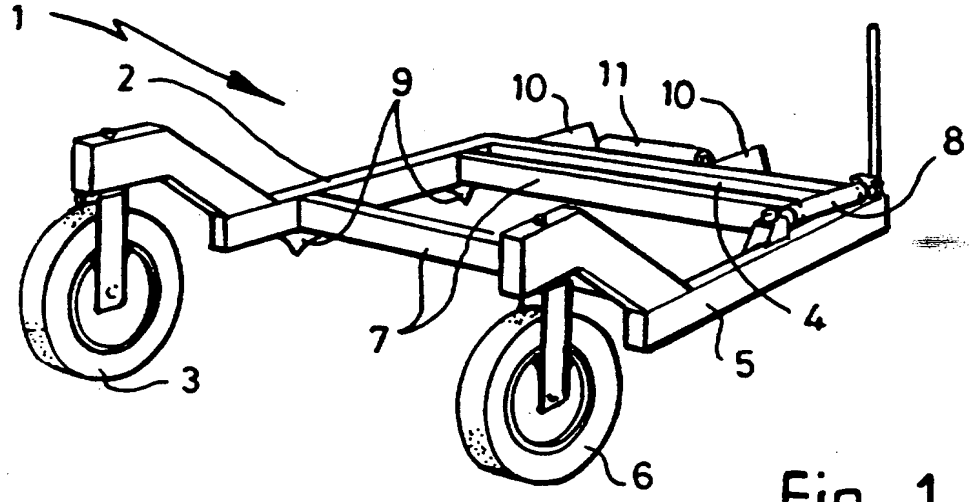

Fig. 1

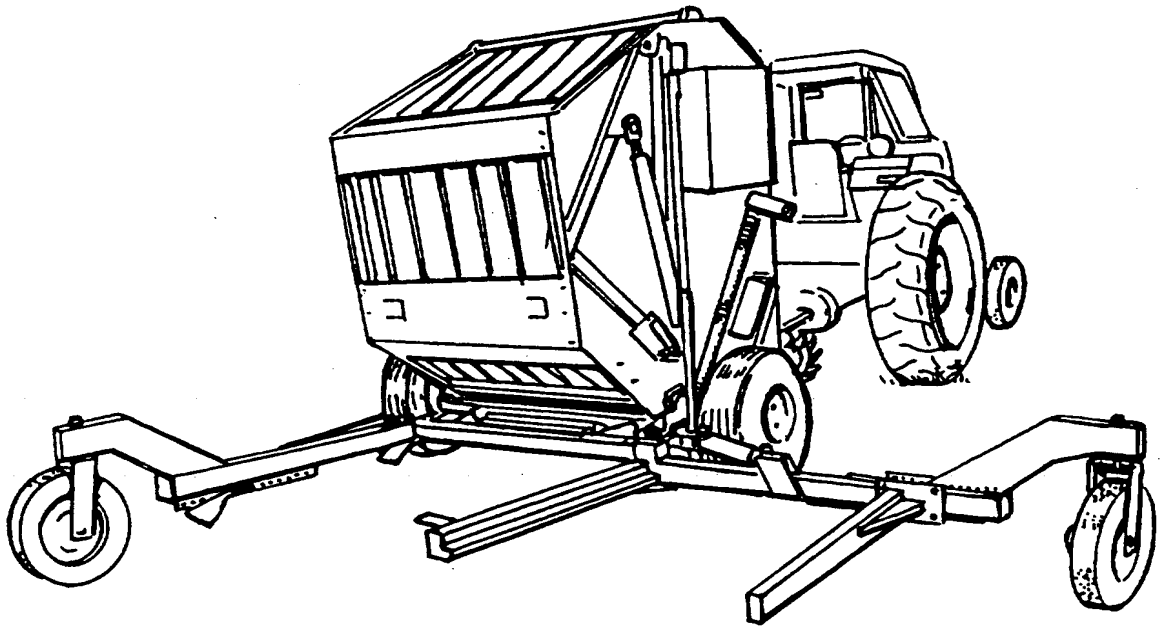

Fig. 2

:DOCID: <GB 2292335A I >

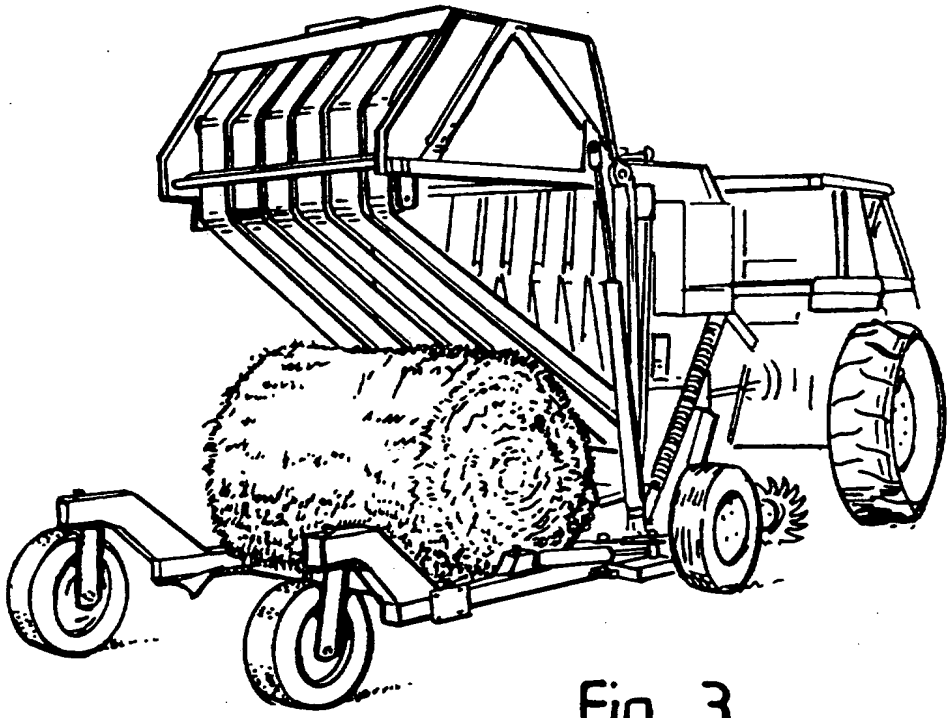

Fig. 3

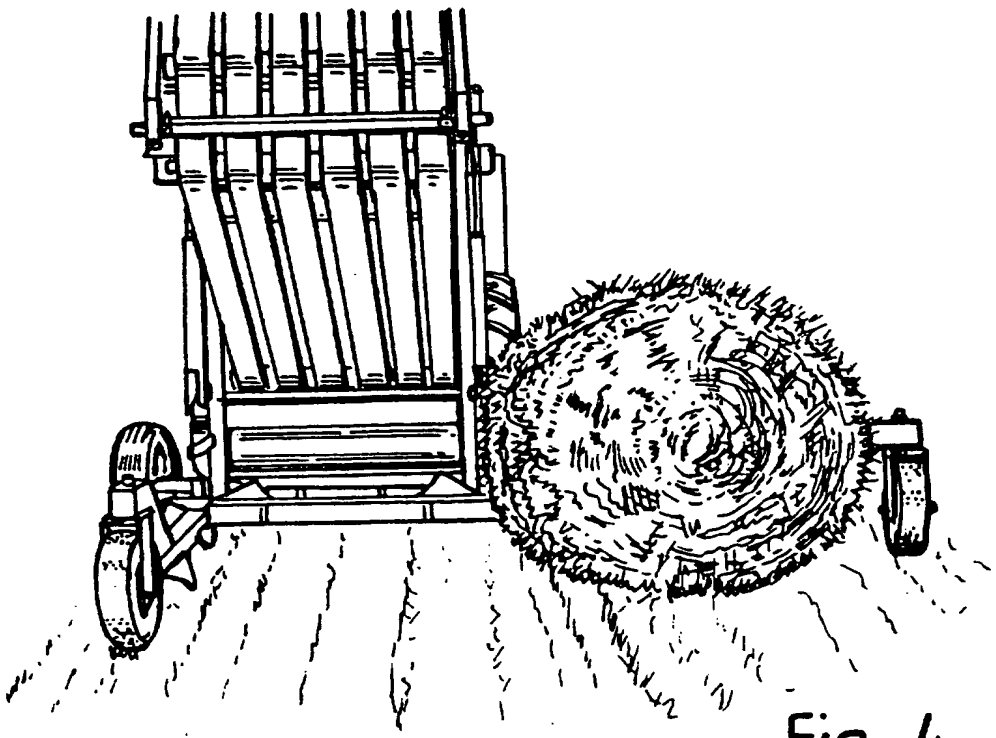

Fig. 4

)OCID: <GB___2292335A__I_>

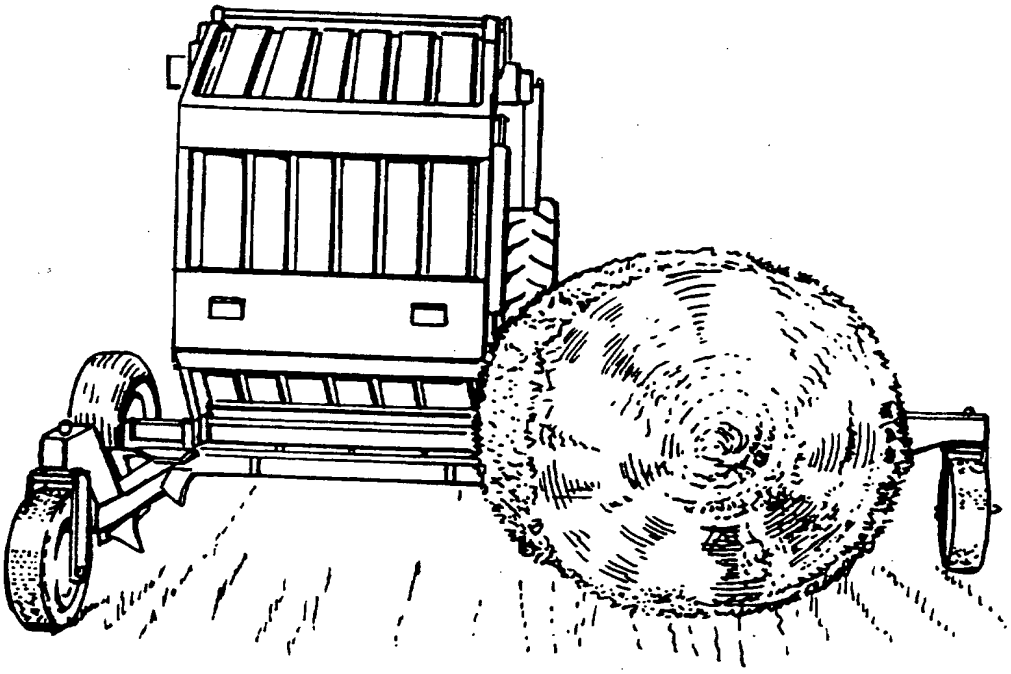

Fig. 5

3DOCID: <GB 2292335A I >

IMPROVEMENTS IN AND RELATING TO ROUND BALERS

Field of the Invention

The present invention relates to an improvement to agricultural baling machines, in particular those which produce so-called round bales.

Background to the Invention

Agricultural baling machines form bales of, for example hay, by picking up the hay as the baler is pulled by a tractor along the field and forming it into a compact bale of circular cross-section, inside the baler.

When a bale is formed, the tractor stops, the tailgate of the baler is opened and the bale of hay drops out into the field directly behind the baler.

In order to start forming the next bale, the tailgate has to be closed. This cannot be done with the first bale still adjacent to the machine and so, conventionally, the farmer has to reverse the tractor to push the first bale out of the way, drive forward to the original position and then close the tailgate, before commencing the next bale.

Not only does this procedure waste valuable harvesting time but the constant use of forward and reverse gears places excessive wear on the tractor. However current technology provides no obvious alternative. (The tractor cannot simply be driven forward to close the tailgate as this would mean driving over the windrow of hay in front of the tractor, thus wasting some and, commonly, compacting the windrow against the baler, impeding the

DOCID: <GB___2292335A__I_>

baler's operation.)

The present invention seeks to alleviate these problems by reducing mechanical wear during the baling process.

Summary of the Invention

According to the present invention, there is provided a device integral to, or operatively associated with, a round baler comprising a means for receiving a bale as it exits a round baler which, in use, is adapted to displace said bale laterally away from a first position at the rear of said baler to a second position to one side of the baler such that the tailgate of said baler can be closed without the need to move said baler forwards.

Preferably, said receiving means comprises a moveable support member pivotally mounted to the rear of the baler to pivot from said first position to said second position.

Preferably said moveable support member comprises an arm which extends rearwardly of the baler when in said first position and has a support surface extending therefrom to support the bale.

Preferably the support surface comprises at least two cross-bars extending from the arm to support the bale therebetween.

Suitably the arm has a castoring wheel at the free end thereof.

Preferably the receiving means further comprises a stationary support member which is fixed extending substantially perpendicularly rearwardly of the baler and which supports the support surface when the moveable support member is in the first position.

Preferably the stationary support member has one or more slanted guide plates to guide the support surface of the moveable support member back to the first position, raising and supporting the free end of the support surface in

SDOCID: <GB 2292335A I >

the process.

Preferably the moveable support member is moved by a piston which is suitably powered hydraulically from the tractor's hydraulic PTO system.

Preferably, the device includes one or more plates, rollers and/or pistons to guide the bale from the baler to the receiving means.

Preferably, the device is connected to the baler at at least two laterally separated fixture points.

According to a second aspect of the present invention there is provided a device substantially as herein before described with reference to and as illustrated in the accompanying drawings.

Brief Description of the Drawings

A preferred embodiment of the present invention will now be more particularly described, by way of example, with reference to the accompanying drawings, wherein:

Figure 1 is a diagrammatic illustration of the device in the first (closed) position;

Figure 2 shows the device in the second (open) position;

Figure 3 shows the device in use, in the closed position with the tailgate of the baler open;

Figure 4 shows the device in use, in the open position, with the tailgate of the baler open;

Figure 5 shows the device in use, in the open position, with the tailgate of the baler closed.

XOCID: <GB___2292335A__I_>

Description of the Preferred Embodiment

Figure 1 shows the device 1 in isolation. The box-section metal framework consists of a stationary support member 2 comprising a rigid bar, at one end of which is a castor wheel 3. The other end is rigidly attached to a base member 4, which in turn is rigidly attached to the rear of a typical round baler (shown in Figures 2-5), for example by means of two fixing points or brackets, so that the base member 4 cannot swivel laterally with respect to the baler.

A moveable support member 5 comprising a bar is pivotally mounted to the base member 4 extending, when in the closed first position, substantially parallel to the stationary support member 2. It has a wheel 6 at one end which must be able to castor or swivel freely.

A pair of parallel cross-bars 7 separated by a distance suitably slightly less than the diameter of a smallest bale to be formed are fixed extending perpendicularly from the moveable support member 5, as can be seen most clearly in figure 2.

The moveable support member 5 is preferably powered to pivot about its point of pivotal attachment by a hydraulic piston 8 pivotally mounted at one end to the base member 4 and at the other end to the movable support member 5 and connected to the tractor's hydraulic system. This serves to move the moveable support member 5 from its closed position (as shown in Figure 1) to the open position (as shown in Figure 2). Guides 9 assist in raising, locating and supporting the free ends of the cross-bars 7 when the moveable support member 5 is returned to its closed position.

Figures 3-5 show the device in use during the baling process. When a bale has been completed, the tail gate of the baler opens and the newly-formed bale drops out onto the closed device (Figure 3). The bale can be guided into position by means of triangular plates 10 and a roller 11 can assist in the removal of the bale from the baler.

:DOCID: <GB 2292335A I >

Once the bale is in position, the piston 8 is activated to move the moveable support member 5 to its open position, carrying the bale with it (Figure 4). The bale has thus been moved laterally through 90°, out of the way of the tailgate of the baler.

Figure 5 shows that the tailgate can now be closed without the need to drive the tractor forwards, or backwards and then forwards, in order to avoid the newly formed bale.

Once the tailgate is closed, formation of the next bale from the windrow in front can be started. As the tractor pulls the device forwards, the first bale drags upon the ground and slips from the unsupported free ends of the cross bars 7 to be left behind in the position shown in Figure 5. The moveable support member 5 can then be returned to its closed position in order to receive the next completed bale.

Figures 3-5 show the use of the device in the formation of straw bales. However the device could equally assist in the formation of bales of hay or sileage.

The device has an additional advantage, apparent when the baling process is completed.

The completed bales are conventionally picked up by a "bale carter" which travels parallel to the longitudinal axis of the cylindrical bales, but which must, due to the conventional dropping of the bales from the baler transverse to the tramlines, or furrows, of the field, traverse the field crossing the tramlines giving an uncomfortable ride to the driver and increasing the stresses on the machine.

Using the device described above, the bales are rotated laterally by 90°, leaving them aligned with the tramlines. The bale carter can therefore use the same direction of travel as the tractor and baler when picking up the bales, i.e. drive along the tramlines rather than across them.

IOCID: <GB___2292335A__I_>

Claims

1. A device integral to, or operatively associated with, a round baler comprising a means for receiving a bale as it exits a round baler which, in use, is adapted to displace said bale laterally away from a first position at the rear of said baler to a second position to one side of the baler such that the tailgate of said baler can be closed without the need to move said baler forwards.

2. A device according to Claim 1, wherein said receiving means comprises a moveable support member pivotally mounted to the rear of the baler to pivot from said first position to said second position.

3. A device according to Claim 2, wherein said moveable support member comprises an arm which extends rearwardly of the baler when in said first position and has a support surface extending therefrom to support the bale.

4. A device according to Claim 3, wherein the support surface comprises at least two cross-bars extending from the arm to support the bale therebetween.

5. A device according to Claims 1-3, wherein the moveable support member has a castoring wheel at the free end thereof.

6. A device according to any of the above Claims, wherein the receiving means further comprises a stationary support member which is fixed extending substantially perpendicularly rearwardly of the baler and which supports the moveable support member when it is in the first position.

7. A device according to Claim 6, wherein the stationary support member has one or more slanted guide plates to guide the support surface of the moveable support member back to the first position, raising and supporting the free end of the support surface in the

DOCID: <GB 2292335A I >

process.

8. A device according to any of Claims 2-7 wherein the moveable support member is moved by a piston which is suitably powered hydraulically from the tractor's hydraulic PTO system.

9. A device according to any of the above Claims, wherein the device includes one or more plates, rollers and/or pistons to guide the bale from the baler to the receiving means.

10. A device according to any of the above Claims, wherein the device is connected to the baler at least two laterally separated fixture points.

11. A device substantially as herein before described with reference to and as illustrated in the accompanying drawings.

)OCID: <GB___2292335A__I_>

Patents Act 1977 **Examiner's report to the Comptroller under Section 17** **(The Search report)**	Application number GB 9416797.0
Relevant Technical Fields (i) UK Cl (Ed.N) B5F (ii) Int Cl (Ed.6) A01D	Search Examiner V L C PHILLIPS Date of completion of Search 17 OCTOBER 1994
Databases (see below) (i) UK Patent Office collections of GB, EP, WO and US patent specifications. (ii) ONLINE DATABASES: WPI	Documents considered relevant following a search in respect of Claims :- 1-11

Categories of documents

X:	Document indicating lack of novelty or of inventive step.	P:	Document published on or after the declared priority date but before the filing date of the present application.
Y:	Document indicating lack of inventive step if combined with one or more other documents of the same category.	E:	Patent document published on or after, but with priority date earlier than, the filing date of the present application.
A:	Document indicating technological background and/or state of the art.	&:	Member of the same patent family; corresponding document

Category	Identity of document and relevant passages	Relevant to claim(s)
	NONE	

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

EDOCID: <GB 2292235A 1 >